

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended): A storage platform system for a hardware/software interface system implemented at least in part by a computing device, said storage system comprising:

multiple instances of a storage platform each instance storing data, each instance of the storage platform including a base schema and a mechanism configured to extend the base schema to define a schema for the data, and ~~divide~~ divide the data into programmably defined change units based on the schema for the data, wherein a change unit is a smallest piece of schema that is individually tracked by each instance of the storage platform and the size of a change unit is adjustable;

a synchronization subsystem native to the hardware/software interface system that enables the system to perform a synchronization operation to synchronize the data stored in the multiple instances of said storage platform based on changes that are sequentially enumerated and tracked on a per change unit basis.

2. (Original): The system of claim 1 wherein the synchronization subsystem synchronizes only a subset of data, from among the entirety of data on said data store, during a synchronization operation.

3. (Previously presented): The system of claim 1 wherein a first instance of the storage platform is a replica running on a hardware/software interface system that has the synchronization subsystem, and a second instance of the storage platform is a data source running on a hardware/software interface system that does not have the synchronization subsystem.

4. (Previously presented): The system of claim 3 wherein the synchronization between the replica and the data source is facilitated by a synchronization adapter that virtualizes the data source by interfacing with an application programming interface of the hardware/software interface system of the replica.

5. (Original): The system of claim 1 wherein a first pair of instances synchronizes changes independently of a second pair of instances, and wherein both the first pair of instances and the second pair of instances are part of a common sync community.

6. (Original): The system of claim 1 wherein conflicts in synchronization are automatically detected and resolved based on predefined determinable criteria.

7. (Original): The system of claim 6 wherein certain of said conflicts are resolved by being logged for manual resolution by an end-user.

8. (Previously presented): The system of claim 1 wherein the synchronization subsystem tracks the state of previous synchronizations with a sync partner, and thereby only synchronizes change units with that partner that have changed since the last synchronization.

9. (Previously presented): A method implemented at least in part by a computing device for synchronizing data stored in multiple instances of a storage platform for a hardware/software interface systems, said method comprising:

storing a base schema and a mechanism to extend the base schema to define a schema for data;

dividing said data stored in a storage platform into programmably defined change units based on the schema for the data, wherein a change unit is a smallest piece of schema that is individually tracked by each instance of the storage platform and the size of a change unit is adjustable;

sequentially enumerating changes to said data and tracking said changes on a per change unit basis;

for each instance of said storage platform, tracking the state of changes for that instance, as well as the state of changes for a plurality of other known instances in the sync community; and

for synchronization, identifying new changes by comparing the enumerated changes for a particular instance with the state of changes for that instance.

10. (Previously presented): The method of claim 9, wherein a first instance, a replica, is instantiated on a hardware/software interface system that directly supports Item-based synchronization and wherein a second instance, a data source, is instantiated on a hardware/software interface system that does not directly support Item-based synchronization, said method further comprising the use of an adapter to virtualize the second instance via a synchronization application programming interface.

11 (Original): The method of claim 10 further comprising detecting synchronization conflicts at the level of change unit granularity.

12. (Previously presented): The method of claim 10, further comprising:
instances reporting success, failure, and/or conflicts at individual change unit level on change application, the instances comprising sync data; and
applications using sync data for updating a backend state.

13. (Previously presented): A method implemented at least in part by a computing device for synchronizing a replica with a data source, each being a sync partner, wherein both said replica and said data source have change state information that is maintained by each sync partner, and wherein said data source uses an adapter to interface with a hardware/software interface system of said replica, said method comprising:

said replica sending to said adapter an updated state information for said replica that, based on a last state information for said data source, reflects new changes that have been made since the last synchronization as reflected in said last state information for said data source, wherein data in the data source includes multiple types of data and each type of data conforms to a schema that defines a size of a change unit, the change unit being a smallest piece of schema that is individually tracked by the data store, and the size of each change unit in each schema is adjustable; and

said adapter, receiving said updated state information for said replica and said new changes, applying a conflict resolution policy selected from a plurality of conflict resolution policies, implementing as many changes to the data source as possible with respect to the specified conflict resolution policy and tracking success or failure for each change on a

change unit by change unit basis, wherein changes are sequentially enumerated and tracked on a per change unit basis.

14. (Previously presented): The method of claim 13, further comprising:
said adapter calculating the new state of the data source based on the success or failure for each change on a change unit by change unit basis, storing this new state information, and transmitting this new state information to the hardware/software interface system of the replica; and
said hardware/software interface system of the replica storing said new state information for said data source for future use by said replica.

15. (Previously presented): The method of claim 13, further comprising:
said adapter transmitting to the hardware/software interface system of the replica the success or failure for each change on a change unit by change unit basis;
said hardware/software interface system of the replica calculating a new state information for the data source based on the success or failure for each change to the data source on a change unit by change unit basis;
said hardware/software interface system of the replica transmitting the new state information to the adapter and storing said new state information for future use by said replica; and
said adapter receiving and storing said new state information.

16. (Previously presented): A computer-readable storage medium comprising computer-readable instructions for a storage platform system on a hardware/software interface system, said storage platform system comprising instructions for synchronizing a local instance from among multiple instances of a storage platform, the data conforming to one or more schemas and divided into programmably defined change units based on the one or more schemas, wherein a change unit is a smallest piece of schema that is individually tracked by each instance of the storage platform and the size of a change unit in each schema is adjustable, and the change units based on changes that are sequentially enumerated and tracked on a per change unit basis.

17. (Previously presented): The computer-readable storage medium of claim 16, wherein the synchronization subsystem synchronizes only a subset of data, from among the entirety of data on said data store, during a synchronization operation.

18. (Previously presented): The computer-readable storage medium of claim 16, wherein a first instance of the storage platform is a replica, that is, running on a hardware/software interface system that has the synchronization subsystem, and a second instance of the storage platform is a data source, that is, running on a hardware/software interface system that does not have the synchronization subsystem.

19. (Previously presented): The computer-readable storage medium of claim 18, wherein the synchronization between the replica and the data source is facilitated by a synchronization adapter that virtualizes the second instance by interfacing with an application programming interface of the hardware/software interface system of the first instance.

20. (Previously presented): The computer-readable storage medium of claim 16, wherein a first pair of instances synchronizes changes independently of a second pair of instances, and wherein both the first pair of instances and the second pair of instances are part of a common sync community.

21. (Previously presented): The computer-readable storage medium of claim 16, wherein conflicts in synchronization are automatically detected and resolved based on predefined determinable criteria.

22. (Previously presented): The computer-readable-storage medium of claim 21, wherein certain of said conflicts are resolved by being logged for manual resolution by an end-user.

23. (Previously presented): The computer-readable storage medium of claim 16, wherein the synchronization subsystem tracks the state of previous synchronizations with a sync partner, and thereby only synchronizes change units with that partner that have changed since the last synchronization.

24. (Previously presented): A computer-readable storage medium comprising computer-readable instructions for synchronizing data stored in multiple instances of a storage platform for a hardware/software interface systems, said computer-readable instructions comprising instructions for:

storing a base schema and a mechanism to extend the base schema to define a schema for data;

dividing said data stored in said storage platform into programmably defined change units based on the schema for the data, wherein a change unit is a smallest piece of schema that is individually tracked by each instance of the storage platform and the size of a change unit is adjustable;

sequentially enumerating changes to said data and tracking said changes on a per change unit basis;

for each instance of said storage platform, tracking the state of changes for that instances, as well as the state of changes for a plurality of other known instances in the sync community; and

for synchronization, identifying new changes by comparing the enumerated changes for a particular instance with the state of changes for that instance.

25. (Previously presented): The computer-readable storage medium of claim 24, further comprising instructions whereby a first instance, a replica, is instantiated on a hardware/software interface system that directly supports Item-based synchronization and wherein a second instance, a data source, is instantiated on a hardware/software interface system that does not directly support Item-based synchronization, said method further comprising the use of an adapter to virtualize the second instance via a synchronization application programming interface.

26. (Previously presented): The computer-readable storage medium of claim 25, further comprising detecting synchronization conflicts at the level of change unit granularity.

27. (Previously presented): The computer-readable storage medium of claim 25, further comprising:

instances reporting success, failure, and/or conflicts at individual change unit level on change application, the instances comprising sync data; and
applications using sync data for updating a backend state.

28. (Previously presented): A computer-readable storage medium comprising computer readable instructions for synchronizing a replica with a data source, each being a sync partner, wherein both said replica and said data source have change state information that is maintained by each sync partner, and wherein said data source uses an adapter to interface with a hardware/software interface system of said replica, said computer-readable instructions comprising instructions for said replica to send to said adapter an updated state information for said replica that, based on a last state information for said data source, reflect new changes that have been made since the last synchronization as reflected in said last state information for said data source, wherein data in the data source includes multiple types of data and each type of data conforms to a schema that defines a size of a change unit, the change unit being a smallest piece of schema that is individually tracked by the data store, and the size of each change unit in each schema is adjustable, such that said adapter, receiving said updated state information for said replica and said new changes, can apply a conflict resolution policy selected from a plurality of conflict resolution policies, can implement as many changes to the data source as possible with respect to the specified conflict resolution policy and track success or failure for each change on a change unit by change unit basis, wherein changes are sequentially enumerated and tracked on a per change unit basis.

29. (Previously presented): The computer-readable storage medium of claim 28, further comprising instructions for said hardware/software interface system of the replica storing said new state information for said data source for future use by said replica, provided that said adapter has calculated the new state of the data source based on the success or failure for each change on a change unit by change unit basis and has this new state information and transmitted this new state information to the hardware/software interface system of the replica.

30. (Previously presented): The computer-readable storage medium of claim 28, wherein said adapter transmits to the hardware/software interface system of the replica the success or failure for each change on a change unit by change unit basis, further comprising instructions for:

said hardware/software interface system of the replica to calculate a new state information for the data source based on the success or failure for each change to the data source on a change unit by change unit basis;

said hardware/software interface system of the replica to transmit the new state information to the adapter and storing said new state information for future use by said replica, such that said adapter can receive and store said new state information.